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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,653	04/19/2001	Apostolos Kantzas	13202.00289	9103

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EXAMINER

CINTINS, IVARS C

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 02/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/837,653

Applicant(s)

Kantzas et al.

Examiner

Ivars Cintins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Dec 12, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration
- 5) ☒ Claim(s) 16-29 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns et al. (U.S. Patent No. 5,580,461) in view of Miller et al. (U.S. Patent No. 5,281,344). Cairns et al. discloses a system wherein a mixture of adsorbent material such as zeolite (col. 6, line 2) and photocatalytic material such as titanium oxide (col. 6, line 54) is subjected to ultraviolet radiation (col. 6, line 41) in a treatment zone having an inlet and an outlet. The claims now differ from this primary reference by reciting a first valve proximal to the fluid inlet and a second valve proximal to the fluid outlet, a screen (claim 11), a controller (claims 12, 13 and 15), and a plurality of treatment devices (claim 14). Miller et al. discloses a system for treating a fluid with a sorbent, and teaches the use of inlet (V1) and outlet (V2) valves. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of Cairns et al. with the inlet and outlet

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valves of Miller et al., in order to provide better flow control for the fluid undergoing treatment in this primary reference device. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of the thus modified primary reference with a screen for the regeneration zone, in order to prevent unwanted escape of particulate material from this regeneration zone. Similarly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide this modified primary reference system with a conventional controller, in order to control the various operations in this system. Furthermore, it been obvious to one of ordinary skill in the art at the time the invention was made to employ a plurality of treatment device in the system of the modified primary reference, in order to increase the treatment capacity of this system.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns et al. and Miller et al. as applied above, and further in view of Hu et al. (U.S. Patent No. 5,385,753). The modified primary reference discloses the claimed invention with the exception of utilizing a composite adsorbent and photocatalytic material. Hu et al. discloses (see col. 1, lines 35-38) that it is known to employ titanium dioxide coated zeolite in photo-oxidation operations. Accordingly, it would

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have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the titanium dioxide coated zeolite of the secondary reference for the zeolite and titanium oxide particles of the modified primary reference, in order to facilitate handling of the treatment materials in this modified primary reference system.

Claims 16-29 remain allowed.

Applicant's arguments filed December 12, 2002 have been noted and carefully considered, but no longer appear to be relevant in view of the new grounds of rejection. Applicant should note, however, that the recitation in which the device is intended to be employed (claim 1, lines 11-19) is not a structural limitation, and hence cannot be relied upon to patentably distinguish apparatus claims 1-15. It is well settled that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is

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reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (703) 308-3840. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Simmons, can be reached at (703) 308-1972.

The fax phone numbers for this art unit are: (703) 872-9311 for "Official" faxes after Final Rejection; (703) 872-9310 for

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all other "Official" faxes; and (703) 872-9492 for "Draft" and other "Unofficial" faxes.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

*Ivars C. Cintins*  
**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
February 23, 2003